COMPLETE LIST OF CURRENTLY AMENDED & PREVIOUSLY PRESENTED CLAIMS

1. (Currently Amended) A computer-implemented method for constructing and tangibly expressing a conic peak-point curve comprising:

   (i) selecting a start point, a_0 on a computer image display of an implementing computer with a computer input device of the implementing computer;

   (ii) selecting an end point, a_1 on the computer image display system with the computer input device;

   (iii) selecting a start tangent direction, e_0 on the computer image display system with the computer input device;

   (iv) selecting an end tangent direction, e_1 on the computer image display system with the computer input device, whereupon the computer image display system, responsive to the implementing computer, displays a centerline bisecting a chord between the start and end points a_0, a_1, extending through an intersection point r of rays extending in the start and end tangent directions e_0, e_1 respectively from the start and end points a_0, a_1;

   (v) selecting [a distance of] a peak point, p, on the centerline [from the chord between the start and end points, a_0, a_1, on the computer image display system with the computer input device] where the peak point is a point on the curve that is farthest away from the chord between the start and end points a_0, a_1, [lying on a centerline segment connecting the center-of-the-chord with a intersection point r of rays extending in the start and end tangent directions e_0, e_1 respectively from the start and end points a_0, a_1] whereupon the implementing computer, using any suitable mathematical formulae, constructs a conic peak-point curve passing through the start point a_0, the peak point p, and the end point a_1, with the start tangent direction e_0 and the end tangent direction e_1; and

   (vi) expressing tangibly the conic peak-point curve using any image display system controlled by the implementing computer.

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2.(Previously Presented) A computer-implemented method for constructing and tangibly expressing a conic point-point curve comprising:

(i)   selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

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(ii)   selecting a start tangent direction, e_0 on the computer image display system with the computer input device;

(iii) selecting a peak point, p, whereupon the computer image display system, responsive to the implementing computer, displays a guide area for locating possible end points loci defined by two rays intersecting at a point s that lies on one of two rays that extends from the start point

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a_0 in the direction of the peak point p at twice (2X) the distance of the peak point p from the start point a_0, the remaining ray extending from s in a direction opposite to the start tangent direction e_0 ;

(iv)   selecting with the computer input device any point in the guide area displayed on the computer image display system as an end point a_1 for a conic point-point curve, whereupon

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the implementing computer, using any suitable mathematical formulae constructs a conic point-point curve passing through the start point, a_0, peak point, p, and the end point a_1 with the start tangent direction e_0, where an end tangent direction e_1 is derived from a point of intersection of rays extending in the start and end tangent directions e_0, e_1, which coincides with the intersection of a ray extending in the start tangent direction, e_0 and a centerline

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extending through the center of a chord between the start and end points a_0, a_1, and through the peak point, p; and

(v)   expressing tangibly the constructed conic point-point curve using any image display system controlled by the implementing computer.

3. (Previously Presented) A computer-implemented method for constructing and tangibly expressing a conic point-tangent curve comprising

    (i)   selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

    (ii)   selecting a start tangent direction, e_0 on the computer image display system with the computer input device;

    (iii)   selecting an end point, a_1 on the computer image display system with the computer input device;

    (iv)   selecting an end tangent direction, e_1 on the computer image display system with the computer input device;

    (v)   selecting a weight, w for the curve with a computer input device of the implementing computer, whereupon the implementing computer, using any suitable mathematical formulae, constructs a conic point-tangent curve passing through the start point, a_0, and the end point a_1 with the start tangent direction e_0 and the end tangent direction e_1, where a peak point p is calculated by the weight, w, which is a parameter defining a proportion between a distance, D_q of the peak point p from a center point, q of a chord between the start and end points a_0, a_1 and a distance, D_r of the peak point p from an intersection point, r of rays extending in the start and end tangent directions e_0, e_1 respectively from the start and end point a_0, a_1; and

    (vi)   expressing tangibly the constructed conic point-tangent curve using any image display system controlled by the implementing computer.

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4. (Previously Presented) The method of claim 3 wherein the selected weight w is calculated from a fixed arbitrarily defined positive number v, multiplied by $\cos(\alpha/2)$, where α is an angle between the start and end tangent directions e_0, e_1 extending from a common point, and the constructed curve converges to limit as α approaches 180°.

5. (Previously Presented) A computer-implemented method for constructing and tangibly expressing a conic point curve comprising:

    (i)   selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

    (ii) selecting a start tangent direction, e_0 on the computer image display system with the computer input device;

    (iii) selecting an end point, a_1 on the computer image display system with the computer input device;

    (iv) selecting a weight, w, with a computer input device of the implementing computer, whereupon the implementing computer, using any suitable mathematical formulae, constructs a conic point curve passing through the start point a_0 and the end point a_1 with the start tangent direction e_0, where an end tangent direction e_1 is set by pre-defined parameters selected with a computer input device, where a peak point p is calculated by the weight w, which is a parameter defining a proportion between a distance D_q of the peak point p from a center point q of a chord between the start and end points a_0, a_1, and a distance D_r of the peak point p from an intersection point r of rays extending in the start and end tangent directions e_0, e_1 respectively from the start and end point a_0, a_1; and

    (v) expressing tangibly the constructed conic point curve using any image display system controlled by the implementing computer.

6. (Previously Presented) The method of claim 5 wherein the selected weight w is calculated from a fixed arbitrarily defined positive number v, multiplied by $\cos(\alpha/2)$, where α is an angle between the start and end tangent directions c_0, c_1 extending from a common point, and the constructed curve converges to limit as α approaches 180°.

5   7. (Previously Presented) A computer-implemented method for constructing and tangibly expressing a conic curvature curve comprising

   (i)   selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

   (ii) selecting a start tangent direction, c_0 on the computer image display system with the computer
10   input device, whereupon the implementing computer displays a guideline perpendicular to the start tangent direction, c_0 on the computer image display system for a center m_0 of a start curvature circle, r_0;

   (iii) selecting a center m_0 of the start curvature circle, r_0 on the displayed guideline; and

   (iv) selecting an end point a_1 on the computer image display system with the computer input
15   device; and

   (v)   selecting an end tangent direction, c_1 on the computer image display system with the computer input device, whereupon the implementing computer, using any suitable mathematical formulae, constructs a conic curvature curve through the start point a_0 and the end point a_1, with the start tangent direction c_0 and the end tangent direction c_1, with the
20   center m_0 of the start curvature circle r_0, and a center m_1 for an end curvature circle r_1 is calculated; and

   (vi) expressing tangibly the constructed conic curvature curve using any image display system controlled by the implementing computer.

8. (Previously Presented) A computer-implemented method for constructing and tangibly expressing a class of point curvature curves including cubic Bezier curves and conics comprising:

    (i) selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

    (ii) selecting a start tangent direction, e_0 on the computer image display system with the computer input device, whereupon the implementing computer displays a guideline perpendicular to the start tangent direction, c_0 for a center m_0 of a start curvature circle r_0 on the computer image display system;

    (iii) selecting a center m_0 of a start curvature circle r_0 on the displayed guideline on the computer image display system with the computer input device,; and

    (iv) selecting an end point a_1 on the computer image display system with the computer input device, whereupon the implementing computer, using any suitable mathematical formulae, constructs a point curvature curve passing through the start point a_0 and the end point a_1, with the start tangent direction c_0 and the center m_0 of the start curvature circle r_0, where an end tangent direction e_1 is set by pre-defined parameters selected with a computer input device; and

    (v) expressing tangibly the constructed point curvature curve using any image display system controlled by the implementing computer.

9. (Previously Presented) The method of claim 8 wherein the constructed curve is a conic and a center m_1 of an end curvature circle r_1 is thereby automatically determined.

10. (Previously Presented) The method of claim 8 wherein the constructed curve is a cubic Bezier curve, and a center m_1 of the end curvature circle r_1 is set by a defined parameter selected using a computer input device.

11. (Previously Presented) A computer-implemented method for constructing and tangibly expressing a Bezier point-tangent curve comprising:

    (i) selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

    (ii) selecting a start tangent direction, e_0 on the computer image display system with the computer input device;

    (iii) selecting an end point, a_1 on the computer image display system with the computer input device;

    (iv) selecting an end tangent direction, c_1 on the computer image display system with the computer input device;

    (v) selecting a weight, w with an input device of the implementing computer, whereupon the implementing computer, using any suitable mathematical formulae, constructs a Bezier point-tangent curve passing through the start point, a_0, and the end point a_1 with the start tangent direction c_0 and the end tangent direction c_1, having a peak point p calculated to lie on a centerline segment connecting a center point q of the chord between the start and end points a_0, a_1 with an intersection point, r of rays extending in the start and end tangent directions c_0, e_1 from the start and end point a_0, a_1 respectively, the weight, w specifying a proportion between a distance, D_q of a peak point p from the center point q of a chord and a distance, D_r of the peak point p from the intersection point, r of the start and end tangents;

    (vi) expressing tangibly the constructed Bezier point-tangent curve using any image display system controlled by the implementing computer.

12. (Previously Presented) The method of claim 11 wherein the selected weight w is calculated from a fixed arbitrarily defined positive number v, multiplied by $\cos(\alpha/2)$, where α is an angle between the

start and end tangent directions e_0, e_1 extending from a common point, and the constructed curve converges to limit as α approaches 180°.

13. (Previously Presented) A computer-implemented method for constructing and tangibly expressing a Bezier point curve comprising:

    (i) selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

    (ii) selecting a start tangent direction, e_0 on the computer image display system with the computer input device;

    (iii) selecting an end point, a_1 on the computer image display system with the computer input device;

    (iv) selecting a fixed weight, w, with an input device of the implementing computer, whereupon the implementing computer, using any suitable mathematical formulae, constructs a Bezier point curve passing through the start point a_0 with the start tangent direction e_0, and the end point a_1, where an end tangent direction e_1 is set by pre-defined parameters selected with an input device of the implementing computer, having a peak point p calculated to lie on a centerline segment connecting a center point q of the chord between the start and end points a_0, a_1 with an intersection point, r of rays extending in the start and end tangent directions e_0, e_1 from the start and end point a_0, a_1 respectively, the weight, w specifying a proportion between a distance, D_q of a peak point p from the center point q of a chord and a distance, D_r of the peak point p from the intersection point, r of the start and end tangents; and

    (v) expressing tangibly the constructed Bezier point curve using any image display system controlled by the implementing computer.

14. (Previously Presented) The method of claim 13 wherein the selected weight w is calculated from a fixed arbitrarily defined positive number v, multiplied by $\cos(\alpha/2)$, where α is an angle between the start and end tangent directions c_0, c_1 extending from a common point, and the constructed curve converges to limit as α approaches $180°$.

5   15. (Previously Presented) A computer-implemented method for constructing and tangibly expressing a simple point-point curve comprising:

      (i)   selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

      (ii) selecting a peak point, p on a computer image display system of an implementing computer

10   with a computer input device, where the peak point is a point on the curve that is farthest away from the chord between the start and end points a_0, a_1;

      (iii) selecting an end point a_1 on a computer image display system of an implementing computer with a computer input device;

      (iv) selecting a weight w for the curve with a computer input device of the implementing

15   computer, whereupon the implementing computer, using any suitable mathematical formulae, constructs a simple point-point curve passing through the start point, a_0, the peak point, p, and the end point a_1, where, using the weight w, a point r is derived on a centerline extending from a center point, q, of a chord between the start and end points, a_0, a_1, and through the peak point, p, establishing an intersection of rays extending through the start and end points, a_0, a_1,

20   setting start tangent and an end tangent directions, e_0, e_1; and

      (iv) expressing tangibly the constructed point-point curve using any image display system controlled by the implementing computer.